



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application No. : 09/529,365 Confirmation No. : 8003  
First Named Inventor : Christoph ESPEY  
Filed : June 13, 2000  
TC/A.U. : 3753  
Examiner : John C. Fox  
  
Docket No. : 038738.48700  
Customer No. : 23911  
  
Title : Electrically Controlled Valve

**PRE-APPEAL BRIEF REQUEST FOR REVIEW**

**Mail Stop AF**  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

This is a pre-appeal brief request for review.

The only issue in the Final Office Action of March 27, 2006 is a rejection of Claims 8-9, 24, 22, and 27 under 35 USC 103 as unpatentable over Best (US 4,702,212) in view of Ihsiwata et al (US 5,443,047).

The claimed invention relates to an electrically activated valve with improved flow conditions in the region of the valve seat 13. These improved flow conditions result from the establishment of a contact area between the valve member 10 and the valve seat 13. The contact area between the valve member 10 and the seat 13 is in the defined annular space and includes the step 15 adjacent to the guide surface 16. The step 15 limits the effective hydraulic diameter of the valve so that it remains constant over its entire lifetime and the guide surface 16 provides that the fuel is diverted to a return passage in an optimum manner to avoid cavitation and its associated noise.

According to the Final Rejection, Best has a valve between a high pressure pump and a sump (Figure 3) shown with a annular seating area “bounded by step, formed at the right most end of 33, and a tapered portion which is read as being configured to avoid cavitation”. Additionally it is indicated that although Best does not use a spring, the reference to Ishiwata shows a biased open valve with a spring 40. The conclusion of the Final Rejection is that it would have been obvious to use such a spring in the valve of Best to assist fluid pressure in opening the valve.

Applicant traverse this rejection on the following 2 grounds:

(1) Best does not have any features which could be interpreted as an annular space between the valve guide and the valve member with a “contact area bounded on one side by a step adjoined by a flow optimizing guide surface configured to avoid cavitation”. The guide surface of Best does not have a step. There are two independent claims 8 and 22 with claim 8 requiring both a step and an adjoining flow optimizing guide surface 16. Best does not have a construction designed to avoid cavitation and most assuredly does not have a step corresponding to step 15 in conjunction with a guiding surface on the valve member as claimed in claim 8. In addition, claim 22 specifically recites that the step is offset in a radius of the valve member in combination with the adjoined flow optimizing guide surface. It is to be noted that the present invention is designed specifically to improve upon devices such as the one disclosed in Best and the reference to Best is similar to DE 197 16041 (corresponding to US Patent

6,068,236) discussed in the background of the present application and submitted with the IDS on April 13, 2000.

(2) It is quite clear that the references are not combinable to meet the claim limitations with regard to the spring. The reference to Ishiwata has a spring but the most important aspect of the primary reference to Best with regard to a spring is stated at column 3, lines 64 to column 4, line 2 wherein it is indicated "the valve member will therefore have a natural tendency to open **thereby obviating the need for an opening spring.** It is certainly clear that the present invention would not result from any combination of the references because Best is designed to work without a spring and the insertion of a spring destroys its function.

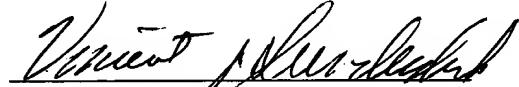
In conclusion, applicants contend that the references to Best and Ishiwata do not make a proper, *prima facie* case of obviousness because in addition to not disclosing specific limitations of each of independent claims 8 and 22, there is a lack of motivation to combine the references and there is a "negative motivation" to use the spring of Ishiwata based on the disclosure of Best. Therefore applicants respectfully request that the Review Panel withdraw the obviousness rejection and allow claims 8-9, 22, 24 and 27.

If there are any questions regarding this response or the application in general, a telephone call to the undersigned would be appreciated since this should expedite the prosecution of the application for all concerned.

If necessary to effect a timely response, this paper should be considered as a petition for an Extension of Time sufficient to effect a timely response, and please charge any deficiency in fees or credit any overpayments to Deposit Account No. 05-1323 (Docket # 038738.48700).

Respectfully submitted,

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